The Households Below Average Income (HBAI) Stat-Xplore Database provides information on living standards based on net, weekly household income measures for a financial year.

Information is available for Great Britain from 1994/95 to 2001/02 and for United Kingdom from 2002/03 to 2018/19 at:
- An individual level
- A family level (benefit unit level)
- A household level.

Please email: team.hbai@dwp.gov.uk with comments and suggestions.

The contents of this guide are:

1. What is Stat-Xplore?
2. Benefits of Using the HBAI Stat-Xplore Database
3. Constraints of Using the HBAI Stat-Xplore Database
4. HBAI Estimates Rounding Rules and Disclosure
5. HBAI Income Definition
6. Current Database Exclusions (available in published tables)
7. Breakdowns Available and Restrictions
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Annex: Worked Example for In-Work Low Income

Please add Source: HBAI Stat-Xplore to any analysis shared or published.
1. What is Stat-Xplore?

**Stat-Xplore** is a free tabulation tool available at gov.uk. Users can access DWP data via databases to create their own analysis. HBAI data is also available via:

**Table 1: HBAI Data Available**

<table>
<thead>
<tr>
<th></th>
<th>Publication at Gov.uk</th>
<th>UK Data Archive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access</strong></td>
<td>Unlimited</td>
<td>Members only</td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td>Main Report</td>
<td>Rounded income variables. Very large households and some variables removed (unless using safe room access)</td>
</tr>
<tr>
<td></td>
<td>Excel Tables</td>
<td></td>
</tr>
</tbody>
</table>

2. Benefits of Using the HBAI Stat-Xplore Database

- Free and accessible to all with user guidance and virtual tour.
- New user-defined analysis of HBAI data with a user-friendly Application Programming Interface (API) and quick export of tables/graphs to Excel/PDF.
- Data is unrounded so users can produce more accurate analysis (final estimates must be rounded as described below).

3. Constraints of Using the HBAI Stat-Xplore Database

- Confidence intervals around estimates and the Gini co-efficients cannot be produced in Stat-Xplore.
- Analysis based on three-year averages is not currently possible so **ethnicity and region variables are excluded**. As a result, the map feature is not available - see **Current Exclusions**.
- Decile and quintile median and mean income amounts should not be created in Stat-Xplore as the calculation differs to the HBAI methodology and published estimates – see **Breakdowns Available and Restrictions**.
- See **Further Top Tips** for careful selection of row and column categories.

4. HBAI Estimates Rounding Rules and Disclosure

Once the user has produced HBAI estimates using unrounded outputs:

- **Percentages** must be rounded to the **nearest 1 per cent**.
- **Numbers** must be rounded to the **nearest 0.1 million**.
- **Amounts** must be rounded to the **nearest £1 (weekly) and £100 (annual)**.

These rounding conventions have been set to reflect that HBAI estimates are based on the Family Resources Survey (FRS) and not actual records of individuals in the UK. Some breakdowns are provided as bands or grouped to further protect against disclosure.

**Please add Source: HBAI Stat-Xplore to any analysis shared or published.**
5. HBAI Income Definition

HBAI income is presented as net, weekly, equivalised, SPI-adjusted household income Before/After Housing Costs in latest prices or in-year prices.

The following table provides specific definitions of the HBAI income measure:

**Table 5: HBAI Income Definition**

<table>
<thead>
<tr>
<th>Definition</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| **Net**    | After deductions have been removed for:  
• income tax payments and National Insurance contributions;  
• domestic rates/council tax;  
• contributions to occupational pension schemes;  
• all maintenance payments;  
• student loan repayments;  
• parental contributions to students living away from home. |
| **Weekly** | All income is on a weekly-basis (any lump sum amounts are converted to a weekly amount). |
| **Equivalised** | An adjustment is made to income to make it comparable across households of different size and composition. A couple with no children is the reference point. |
| **SPI-adjusted** | An adjustment is made to sample cases at the top of the income distribution to correct for under-reporting of earnings and volatility in the highest incomes captured in the survey. |
| **Household** | One person living alone or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area and can consist of one or more families. |
| **Income** | From all sources from all household members (including children's):  
• usual net earnings from employment;  
• profit or loss from self-employment (losses are treated as negative income);  
• state support - all benefits and tax credits, including state pension;  
• income from occupational and private pensions;  
• investment income;  
• maintenance payments, if a person receives them directly;  
• income from educational grants and scholarships;  
• the cash value of certain forms of income in kind, including free school meals. |
### Definition | Explanation

**Before/After Housing Costs (BHC/AHC)**

Before Housing Costs (BHC) indicates the following housing costs have not been deducted from income, however After Housing Costs (AHC) indicates the following housing costs have been deducted from income:
- rent (gross of housing benefit).
- water rates, community water charges and council water charges.
- mortgage interest payments.
- structural insurance premiums.

**In latest prices**

Indicates variants of the Consumer Price Index (CPI) are used to adjust income for inflation to the ‘latest’ publication year prices to be able to compare how incomes are changing over time in real terms.

**In year prices**

Income has not been adjusted for inflation so are in 'nominal' terms.

Note: Negative incomes BHC are reset to zero.

Further information can be found in the HBAI Methodology and Information Report at [gov.uk](https://www.gov.uk) or clicking on the ‘i’ icon for a measure or breakdown in the database.

### 6. Current Database Exclusions (available in published tables)

The following breakdowns have not been included in this version:
- Educational Attainment
- State Support Received
- Pensions Receipt
- Direct Payment Accounts
- Bills in Arrears
- Material Deprivation Questions
- Receipt of Disability Benefits
- Disability Time-Series: Illustrative measures of living standards, excluding Disability Living Allowance, Personal Independence Payment and Attendance Allowance from income.
- Ethnicity*
- Region*

*Three-year average estimates, used for presenting breakdowns where single year estimates are considered too volatile, are not currently available in Stat-Xplore. As a result, the map feature is not accessible on the database.

Gini co-efficients for income inequality analysis are also not possible in Stat-Xplore.
7. Breakdowns Available and Restrictions

HBAI Stat-Xplore allows users to create their own analysis of these breakdowns:

### Table 7: HBAI Stat-Xplore Database Breakdowns Available

<table>
<thead>
<tr>
<th>Time Characteristic:</th>
<th>Characteristics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Year 1994/95 to latest year</td>
<td>Disability:</td>
</tr>
<tr>
<td></td>
<td>• Within the Family</td>
</tr>
<tr>
<td></td>
<td>• Mix Within the Family</td>
</tr>
<tr>
<td></td>
<td>• Disabled Children in the Family</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Individual:</th>
<th>Gender of Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All Individuals</td>
<td>Age-band of Individual</td>
</tr>
<tr>
<td>• Children</td>
<td></td>
</tr>
<tr>
<td>• Working-Age</td>
<td></td>
</tr>
<tr>
<td>• Pensioners</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quintile of Household Income</th>
<th>Economic Status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Before/After Housing Cost)</td>
<td>• Of Adults in the Family</td>
</tr>
<tr>
<td></td>
<td>• Of the Child’s Family and Family Type</td>
</tr>
<tr>
<td></td>
<td>• Of the Household</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decile of Household Income</th>
<th>Marital Status of Adults in the Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Before/After Housing Cost)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Household Income Thresholds</th>
<th>Family Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Before/After Housing Cost) in latest prices:</td>
<td></td>
</tr>
<tr>
<td>Relative Low Income:</td>
<td>Number of Children in the Family</td>
</tr>
<tr>
<td>• Below/At or above 50% of Median Income</td>
<td></td>
</tr>
<tr>
<td>• Below/At or above 60% of Median Income</td>
<td>Age of Youngest Child in the Family</td>
</tr>
<tr>
<td>• Below/At or above 70% of Median Income</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Absolute Low Income:</th>
<th>Savings and Investments in the Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below/At or above 60% of 2010/11 Absolute Median Income</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures of Net, Weekly Household Income Before and After Housing Costs in latest and in-year prices:</th>
<th>Tenure Type of the Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Material Deprivation:</td>
</tr>
<tr>
<td>Median</td>
<td>• Children in Combined Low Income and Material Deprivation</td>
</tr>
<tr>
<td>Range</td>
<td>• Children in Combined Severe Low Income and Material Deprivation</td>
</tr>
<tr>
<td></td>
<td>• Pensioners aged 65 and over in Material Deprivation</td>
</tr>
</tbody>
</table>

Click on the ‘i’ icon for descriptions and any data issues for a breakdown.

Variations of these breakdowns are also possible using the ‘Add Derivation’ feature.
However, the following restrictions exist:

- **Economic Status of the Child’s Family and Family Type**: should only be created for children i.e. type=Child as the breakdown focusses on this group.
- **Quintile of Household Income and Decile of Household Income**: should not be tabulated with measures as the methodology for calculating median and mean amounts differs to the HBAI publication tables methodology and produces slightly different estimates:
  - **Report and published tables**: estimates are based on the amounts at points on the household income distribution i.e. the median of decile 9 is the household income amount at the 85th percentile.
  - **Stat-Xplore**: the mean or median household income of those in the specific quintile or decile is estimated – for example, the median of decile 9 is the median income of households in the group Decile 9.

### 8. Important Footnotes

The following important footnotes are displayed on tables for users must comply by:

#### Table 8: Important Footnotes for HBAI Stat-Xplore

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Figures are for Great Britain up to 2001/02, and for the United Kingdom from 2002/03. The reference period is single financial years.</td>
</tr>
</tbody>
</table>
| II     | Figures derived are unrounded. Before use of these figures, users must use the following rounding conventions:  
  - Percentages must be rounded to the nearest 1 per cent.  
  - Numbers must be rounded to the nearest 0.1 million.  
  - Amounts must be rounded to the nearest £ (weekly) and nearest £100 (annual).  
  These rounding conventions have been set to reflect that HBAI estimates are based on survey data and not actual records of individuals in the UK. |
| III    | Small changes in estimates from year to year, particularly at the bottom of the income distribution, may not be significant in view of data uncertainties. Please refer to the Important User Guidance on the Home page of the HBAI database. |
| IV     | The tables use grossing factors based on 2011 Census data, so caution should be exercised when making comparisons with published reports and tables prior to 2012/13. |
| V      | ".." indicates data not being available in that year. |
| I      | Click to view information about the category and any data issues. |
| cpi    | All tables created here apply CPI-adjusted inflation and so will not be consistent with published reports and tables prior to 2014/15. |

Note that Footnotes are not displayed on percentages tables in HBAI Stat-Xplore.

**Please add Source: HBAI Stat-Xplore to any analysis shared or published.**
9. How the Database Works

Log in at: https://stat-xplore.dwp.gov.uk/webapi/jsf/login.xhtml

Please take the tour to learn about how to use a Stat-Xplore database:

Click on the three dots on the top right-hand corner of the page and select to find the ‘Tour’ again if you have visited the website before. Further really useful guidance can be found by selecting the ‘?’ icon.

Select the Households Below Average Income Database and please take time to read the front page for important information on rounding final figures and known issues.

Click on the database icon or a ready-made table
10. Ready-Made Tables

Here is a ready-made table for “Household Income Threshold: 60% of median income BHC by Type of Individual for all years”:

![Ready-made table image]

The user can select which ‘Type of Individual’ to view in the table by selecting from the ‘wafer’ list.

Click on the ‘Go’ button in the top right-hand corner of the screen to ‘Download Table’. An excel workbook will be created – as wafer was selected, a table will be created for each group in the wafer, in this example, each ‘Type of Individual’ is outputted.

![Excel table image]

Please add Source: HBAI Stat-Xplore to any analysis shared or published.
11. User-Defined Analysis

When the user double-clicks on the database icon, the following page is displayed:

**a. Creating a Time-Series**

Drag Financial Year 2018-19 to the row and hover over the ‘third square down’:

Then drag the breakdown Financial Year and select ‘Row’ to get the time-series as a row.
Then click on ‘Retrieve Data’ to get the outputs:

b. Converting a Number Table to a Percentage Table

To convert from a number to a percentage, choose ‘Table Options’ → Percentages and select row or column:

Important footnotes do not currently display on percentages tables (see 7. Important Footnotes on p8).

To revert back from a percentages table to a numbers table, choose ‘Table Options’ → Percentages and select None.

Please add Source: HBAI Stat-Xplore to any analysis shared or published.
c. Add Derivation

The ‘Add Derivation’ feature allows the user to create a variation of a category. 
Example 11c.1 Median Household Income BHC in Latest Prices

Select ‘median’ from the **Measures** → **Household Income BHC in latest prices** as a row and then click on the three dots next to the label:

Create a name for the new derivation, such as ‘60% of median income BHC in latest prices’, add the formula: $0.6 \times v1$ – where $v1$ is the original median measure – and click create.

Click on ‘Retrieve Data’ and the table provides median income and the 60% threshold of median income in 2018/19:

This table can be produced for all years and for other thresholds too.
Example 11c.2 Household Income Distribution BHC in Latest Prices

Select ‘range’ from the Measures → Household Income BHC in latest prices. In the pop-up box, create a name and choose the minimum and maximum income amounts and the increment.

For this example, the range selected is from £0 to £1000 per week, in increments of £10 per week:

After pressing ‘Next’, the range requested appears:

Create the measure and it will be appear on the left-hand side with the other breakdowns under the category ‘Ranges’.

Select the new range as a row and retrieve data (removing totals column):
Limitations are placed for deriving ranges and a red warning will appear if the following criteria are not met:

**Table 11c: Limitations for Deriving Income Ranges**

<table>
<thead>
<tr>
<th></th>
<th>Before Housing Costs</th>
<th>After Housing Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimum Income</strong></td>
<td>£0</td>
<td>-£100</td>
</tr>
<tr>
<td><strong>Maximum Income</strong></td>
<td>£1,500</td>
<td>£1,500</td>
</tr>
<tr>
<td><strong>Increment</strong></td>
<td>At least £10</td>
<td>At least £10</td>
</tr>
<tr>
<td><strong>Maximum number of ranges</strong></td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

**d. Outputting a table to Excel**

Click on the ‘Go’ button in the top right-hand corner of the screen to ‘Download Table’. An excel workbook will be created containing the table:

**e. Outputting a graph as a PDF**

For HBAI Stat-Xplore, most analysis can be produced using the table outputted in Excel. However, a graph can be generated using the graph view and then outputting as a PDF.

Please add Source: HBAI Stat-Xplore to any analysis shared or published.
f. Steps for Other Common User-Defined HBAI Estimates Analysis

The following table provides steps for producing some common HBAI data analysis:

Table 11f: Steps for Other Common User-Defined HBAI Estimates Analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Filter</th>
<th>Wafer</th>
<th>Row</th>
<th>Column</th>
<th>Number to Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk for 60% of median income BHC by Type of Individual, All Years</td>
<td>Type of Individual</td>
<td>Financial Year (All)</td>
<td>60% of median income (BHC) in latest prices</td>
<td>Table Options → Percentages → Row</td>
<td></td>
</tr>
<tr>
<td>Composition of individuals below 60% of median income (BHC) in latest prices by age, 2018/19</td>
<td>60% of median income (BHC)</td>
<td>Age-band of individual</td>
<td>Financial Year 2018/19</td>
<td>Table Options → Percentages → Row</td>
<td></td>
</tr>
<tr>
<td>Children in Combined Low Income and Material Deprivation, All Years</td>
<td>Type=1 (Child)</td>
<td>Financial Year (All)</td>
<td>Children in Combined Low Income and Child Material Deprivation</td>
<td>Table Options → Percentages → Row</td>
<td></td>
</tr>
<tr>
<td>Pensioners aged 65 and over in Material Deprivation, All Years</td>
<td>Type=3 (Pensioners)</td>
<td>Financial Year (All)</td>
<td>Pensioners in Material Deprivation: Select: - Not in pensioner material deprivation - In material deprivation</td>
<td>Table Options → Percentages → Row</td>
<td></td>
</tr>
</tbody>
</table>

Please add Source: HBAI Stat-Xplore to any analysis shared or published.
12. Further Top Tips

The following table provides top tips for creating HBAI estimates in HBAI Stat-Xplore:

Table 12. Further Top Tips for Using HBAI Stat-Xplore

| Stat-Xplore vs Published Tables                                    | • Check whether the breakdown you require is currently available in the Published Tables.  
                                                                 | • Take care when trying to replicate published tables – see Filter tip below. 
                                                                 | • Not all breakdowns are available – see Exclusions below. |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Composition Tables                                                  | Characteristics of a group:                                                                                                       |
| Remember Composition=Column                                           | • Filter by the required Type of Individual or breakdown.  
                                                                 | • Select ‘Column’ when converting to Percentages.                                                                                   |
| Risk Tables                                                          | Individuals falling below or at/above a threshold:                                                                                   |
| Remember Risk = Row                                                   | • Filter by the required Type of Individual or breakdown.  
                                                                 | • Select ‘Row’ when converting to Percentages.                                                                                      |
| Build a table                                                        | In the following order:                                                                                                              |
|                                                                     | 1. Filter  
                                                                 | 2. Wafer  
                                                                 | 3. Column  
                                                                 | 4. Row  
                                                                 | Select ‘Types of Individual’ as a ‘wafer’ to produce the same cross-tabulations for each type. |
| Filter for specific Types of Individual                              | While some breakdowns have a ‘Not Applicable – individual is not a child/pensioner aged 65 or over’ or similar category, filtering to the specific ‘Type of Individual’ will produce more useful tables for HBAI estimates - particularly when calculating percentages. |
| Convert a Table into a Graph                                         | Once the table has been created, select the Graph View.                                                                            |
| Removing Financial Year Total                                        | Click on the three dots next to the label and untick ‘Total’.  
                                                                 | (This is a necessary feature of Stat-Xplore to allow conversion of numbers to percentages for both rows and columns but users should remove the total before exporting the tables and analysing results). |

Please add Source: HBAI Stat-Xplore to any analysis shared or published.
Annex: Worked Example for In-Work Low Income

1. Select ‘Working-Age Adults’:
   - Click on ‘Type of Individual’.
   - Tick ‘Working-Age’.
   - Select ‘Filter’.

2. Select the ‘60% of median income BHC threshold’:
   - Select ‘Household Income Threshold – Before Housing Costs’.
   - Select ‘60 per cent of median income (BHC) in latest prices’.
   - Tick both ‘Below threshold’ and ‘At or above threshold’ and click on ‘Column’
   - Click on the three dots next to ‘Financial Year’ and untick total.

3. Select ‘Adults in Work’:
   - Select ‘Economic Status of Adults in the Family’.
   - Select ‘One or more working’, tick each of the categories and click on ‘Row’.
   - Click on the category hyperlink to see all groups.
   - Click on ‘Retrieve Data’.
4. Click on the ‘i’ icon next to the breakdown for view the information page.

5. For composition of those in-work by low income threshold:
   - Select ‘Table Options’.
   - Select ‘Percentages’.
   - Tick ‘Column’.

6. For risk of in-work low income:
   - Select ‘Table Options’.
   - Select ‘Percentages’.
   - Tick ‘Row’.

Both thresholds (below and at/above) are needed for Stat-Xplore to calculate risk percentages. Footnotes cannot currently be presented with percentage tables.
7. Click on the ‘Go’ button in the top right corner and the table is exported to Excel:

8. Click on ‘Graph View’ and select a chart format:

9. Select ‘Download Graph' to save as a PDF.

   Please add Source: HBAI Stat-Xplore to any analysis shared or published.